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CERTAIN FURTHER EXPERIMENTS IN SYNÆSTHESIA¹

By CHARLES PEABODY

IN January, 1914, a questionnaire in the following form was sent to all the members of the American Anthropological Association and of the American Folk-Lore Society:

It has occurred to me that the members of the American Anthropological Association and of the American Folk-Lore Society could possibly help me in the matter of a questionnaire on certain aspects of child study.

Would it be possible for you to furnish me with answers to some or all of the following questions addressed to children of your family or acquaintance?

1. When thought of in a series do the numbers from 1 to 50 form a figure of any definite shape or do they present to the mind a straight line? If a figure, can you set it down; if a straight line, how does it appear? (Please set down the fifty numbers on the paper as they appear to you.)

2. Do the hours of the day, the days of the week, and the months of the year, when thought of consecutively, suggest a straight line, a curve, a circle, or other figure? Will you arrange on the paper the hours, days, and months as they appear to you?

3. Do the letters of the alphabet arrange themselves in your mind in any figure, and if so can you set it down?

Name, age, and notes on the disposition of the child.

The undersigned would be very glad to receive any information as to the ideas of children up to fifteen years, on these subjects and on any others related to them.

Later, an identical questionnaire, with only such changes as made it suitable to those of riper years, was sent to each instructor of Phillips Academy, Andover, Massachusetts, with the kind permission of the principal.

Of the former set, 600 or 700 in number, about 130 were returned with answers; these included about 40 from one member of the

¹ In preparing this preliminary report, it is a pleasure to record my sincere acknowledgments for aid and suggestions to Professor Mary Whiton Calkins, Professor of Psychology in Wellesley College; to Dr Louis N. Wilson, Librarian of Clark University; to Dr Benjamin Rand, Librarian in Emerson Hall, Harvard University; to Dr Alfred E. Stearns, Principal of Phillips Academy, Andover, and to Dr Ernest C. McDougale of Clark University.

American Anthropological Association in Houghton, Michigan, who collected the answers from the school children he was enabled to approach. Deducting these, we have a residue of 80 or more, rising ten percent of the inquiries; this should be considered a good result from a questionnaire issued broadcast geographically and without authority to compel answers.

The general indifference to questionnaires on the part of that class of people supposedly most interested in the subject, may here be noted, as it has heretofore by the author and by one of the most important writers on the subject as well.¹

The response from Phillips Academy has been more remunerative, but many of the answers arrived too late for inclusion. With good fortune it is hoped to obtain a fair report from nearly all the students (more than 500), and that the most interesting experiment especially urged by Professor Calkins, of trying the "persistency of forms" after the lapse of some months, may be carried out.

Mr A. E. Bostwick, Librarian, of St Louis, and others, as well as the author's own researches, bring out a considerable literature on this subject. In the lack of more complete information the interest seems to lag somewhat at present. A few of the more important articles on the subject are appended;² they are more likely to deal with what the French well term "synopsie" than with the very broad "synæsthesia," including color-audition, etc.

Prior to the time of preparation, 160 answers that were of use were received, and there follow a number of summaries of these answers that in great measure are self-explanatory. They are also arranged in such a way as to afford easy comparison with the published summaries of Galton, Phillips, Miss Calkins, and Manouvrier.

¹ Cf. Flournoy, Th., *Les Phénomènes de Synopsis*, Geneva, 1893, p. 12.

² Galton, F., in *Jour. Anthr. Inst. G. B. and Ireland*, 1880-81, pp. 85 ff. Galton, F., *Inquiry into Human Faculty*, London, 1883, pp. 114 ff. Whiting, Margaret C., in *Pedag. Sem. Clark Univ.*, 2, 1892-93, pp. 107 ff. Flournoy, Th., *Phénomènes de Synopsis*, Geneva, 1893. Patrick, G. T. W., in *Pop. Sci. Month.*, 1892-93, pp. 504 ff. Calkins, M. W., in *Amer. Jour. Psychology*, 1892-93, pp. 439 ff.; *ibid.*, 1895-96, pp. 90 ff. Phillips, D. E., in *Amer. Jour. Psychol.*, 1896-97, pp. 506 ff. Hornbrook, Adelia R., in *Educ. Rev.*, v, pp. 467 ff. Manouvrier, L., in *Bull. et Mém. Soc. d'Anthr. de Paris*, 1908, pp. 584 ff. Pierce, A. H., in *Psychol. Bull.* (reviews, etc.), volumes for 1911, pp. 56 and 157; for 1912, p. 179, and for 1913, p. 118. McDougale, Ernest C., in *Pedag. Sem. Clark Univ.*, 1914.

For convenience, directions have been omitted and the points of the compass used instead as conventionalized on the map.

In the instances, not a few, marked "indefinite," the obvious interpretation is along the line of least resistance, a straight line or a circle, as the case may be.

The bugaboo of receiving false or "faked" answers from the numerous youths who do not take these things seriously has more or less vanished, since study of others' researches has shown how similar are the wildest extremes of a supposititious imagination, and since a little reflection will show that an absolute fake is well nigh impossible. The "faking" mind will again run along the line of least resistance, and any fantastic figure is likely to be the result of a more or less unconscious preëxisting mental picture.

Under "Varia" are reported most of the very interesting figures;

SUMMARY I

	NUMBERS	HOURS	DAYS	MONTHS	ALPHABET
Straight line to north	8	3	1	3	0
Straight line to northeast	4	1	0	2	3
Straight line to east	70	16	51	39	81
Straight line to southeast	0	0	3	0	1
Straight line to south	19	11	18	18	9
Straight line to southwest	0	0	0	0	0
Straight line to west	0	0	3	0	0
Straight line to northwest	0	0	0	0	0
Straight line indefinite	16	5	20	6	14
Broken line to north	3	0	0	1	0
Broken line to northeast	9	0	1	0	0
Broken line to east	3	0	6	2	3
Broken line to southeast	1	0	2	2	5
Broken line to south	0	0	0	0	0
Broken line to southwest	1	0	0	0	0
Broken line to west	0	0	0	0	0
Broken line to northwest	3	0	0	0	0
Broken line indefinite	0	0	0	0	1
Circle, north-east-south-west	0	59	5	16	0
Circle, north-west-south-east	0	2	4	9	0
Circle, indefinite	0	18	7	14	1
Varia	19	22	18	29	20
No figure	3	8	7	5	12
No answer or wrong answer	1	15	14	14	10
Total	160	160	160	160	160

as a whole, however, in the summaries, no answer that can be included under any other head is put under Varia.

Percentages have been worked out for convenience in comparison with others' work.

In order to determine what is the true proportion of real "forms" and the varying character of these "forms," a few additional tables are presented, showing the proportion of straight and broken lines, circles, etc.

SUMMARY II

	NUMBERS		HOURS		DAYS		MONTHS		ALPHABET	
		%		%		%		%		%
Straight line.....	117	.731	36	.225	96	.600	68	.425	108	.675
Broken line.....	20	.125	0		9	.056	5	.031	9	.056
Curve.....	5	.031	0							
Circle.....			79	.494	16	.100	39	.244	1	.006
Varia.....	6	.038	22	.137	18	.113	29	.181	20	.125
No answer or wrong answer.....	1	.006	15	.094	14	.087	14	.088	10	.063
No figure.....	3	.019	8	.050	7	.044	5	.031	12	.075
Residue.....	8	.050								
Total.....	160	1.000	160	1.000	160	1.000	160	1.000	160	1.000

SUMMARY III

	NUMBERS		HOURS		DAYS		MONTHS		ALPHABET	
		%		%		%		%		%
Straight line, east and south, and indefinite.....	105	.656	32	.200	89	.556	63	.394	105	.656
Circles, north-east-south-west, and indefinite.....			77	.481						
No answer, wrong answer, or no figure.....	4	.025	23	.144	21	.131	19	.119	22	.138
Remainder.....	51	.319	28	.175	50	.313	78	.487	33	.206
	160	1.000	160	1.000	160	1.000	160	1.000	160	1.000

SUMMARY IV

Unusual figures.....	23	.144	31	.194	24	.150	33	.206	22	.138
Remainder.....	137	.856	129	.806	136	.850	127	.794	138	.862
	160	1.000	160	1.000	160	1.000	160	1.000	160	1.000

COMMENT

The influence of feelings for direction may be instantly seen. Whatever the truth about the causes of visualization, whether with Flournoy we invoke the three types of association or with Phillips refer the phenomena to space concepts, there is not the slightest doubt that the "associations" with arithmetics, spelling-books, and later reading are to be eliminated at the outset.

The proportion of straight lines "east and south" in the whole number is due largely to these associations and memories.¹ If we read as the Chinese, or wrote as the earlier Greeks, "*Boustrophedon*," the proportion would not be so large. Add to this the unconscious feeling for gravitation, and it seems surprising that there are any linear visualizations other than the horizontal right and vertical down.

That reading is perhaps as potent a factor as the memory of juvenile text-books is seen in the large proportion of the "east" in the sum total of the "east and south" lines for the number and alphabet columns.²

A search in the Harvard and Departmental Educational libraries in Cambridge shows that for the last seventy-five years there has been no rule in printing the numbers and the letters on the page where the children supposedly first see them. They run sometimes horizontally and sometimes vertically, and with the letters sometimes in groups coming under both heads.

A few of the extraordinary geometrical forms associated rarely by the subject with numbers or letters may hark back to the counting by repeated figures or shapes somewhat in vogue at present. This process would surely help a child who is inclined to visualize.

Naturally, in the case of the hours, days, and months, the proportion of straight lines is smaller.

Why the days arrange themselves so much more readily in lines than the months (a percentage of .600 compared with .425) is not clear. Like the expressions "All the year round" and "The revolv-

¹ One hundred and five in 117, 32 in 36, 89 in 96, 63 in 68, 105 in 108, respectively. (The "indefinite" lines are included in the same class as the "east and south," since, if the subjects who simply wrote "straight line" had other directions in mind, they surely would have mentioned that fact.)

² Seventy in 89, and 81 in 90, respectively.

ing year," the month concepts probably have an astronomical basis lacking in the case of the weeks, which are but a part of the less obvious lunar month.

For the hours it goes without saying that the clock-face is responsible for the "circles, N., E., S., W." (48% of the whole). That 52% of the subjects resisted or escaped such an obvious stimulus to imagination is remarkable.¹

It is probable that the "no figures" should be added to the straight-line columns, but these are not many and would change the proportion but little. This should apply to the hours as well as to the other four titles.

In Galton's series of number forms the clock-face was nearly negligible. This is strange, unless it is because the figures on the clock are so often Roman, and do not affect the visualization of the Arabic.

In one of Miss Calkins' summaries,² where the same titles for questions were taken, the proportion of results is different. Of 67 answers we here have, for number-forms—

Straight lines	17
Broken lines	31
Curves	12
Not recorded	<u>7</u>
	67

Some of the discrepancy may be accounted for if, during her investigation (involving many more than the 67 subjects), only extraordinary straight lines were accorded a place in the list of true "forms."

Summary III begins an attempt to get at the relative frequency of visualizations in the more restricted sense. Ruling out all straight lines "east" and "west," and of course all "no figures" and erratic or absent answers, the remainder may fairly be treated as visualizations.³ There is one obvious exception: the normal circle should be excluded in the case of the hours.

¹ The circles marked "indefinite" have here been included with those marked "N., E., S., W." for the reasons given in the recent note.

² *Amer. Jour. Psychol.*, 1892-93, p. 449, summary XIII.

³ The "indefinite" are here treated as before.

Eline Walpert 14 years
 1 12 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
 18 19 20 21 22 23 24 25 26 27 28 29 30
 31 32 33 34 35 36 37 38 39 40 41 42 43 44
 45 46 47 48 49 50.

Monday Tue Wed Thur Sat. Sun Days
 3 8 9 10 11 12 13 14 15 16 17 18 19
 20 21 22 23 24 25 26 27 28 29 30
 31 Jan Feb Mar Apr May June Sept
 4 Oct Nov Dec Months

ABC & H I J K L M N O P Q R S T U V W X Y Z
 Peculiar disposition
 very talkative
 everyone her equal.

I, 2, 3, 4, 5

7 8 9 10 11 12 13 14 15 16 17 18 19 20
am pm
Mon Tue Wed Thur Fri Sat Sun
Jan Feb Mar Apr May June July Aug Sept Oct

7 8, 9.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

II

50 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49

6

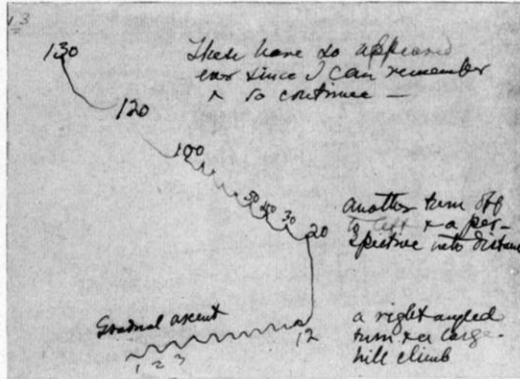
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

10

I. Ans. a. Yes.
 b. A figure of definite shape, as roughly sketched below:
 Explanation:
 Figures from 1 to 50 are always thought of as in an upward-mounting, somewhat straggling line, broken at the tens. The particular number thought of is always visualized as more distinct, darker, etc., than those above or below it. In the diagram 25 is such a number.

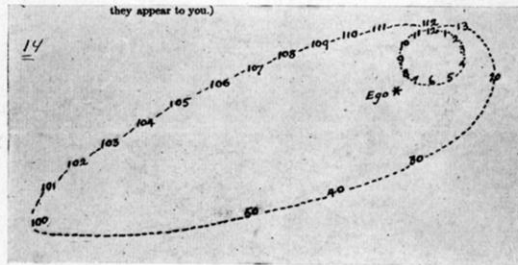
12

910
 mid
 11 12 am 7
 1 2 3 4 5 6
 Sat
 7
 S
 Aug Sept Oct



13

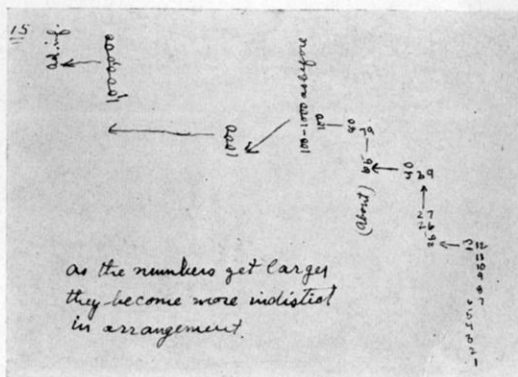
50
 41 42 43 44 45 46 47 48 49
 3 5
 37
 36
 35
 80 31 32 33 34
 20 21 22 23 24 25 26
 27 28 29 straight



14

definite shape, as
 shown below:

20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



15

After all this is done, we have in percentages:

NUMBERS	HOURS	DAYS	MONTHS	ALPHABET
.319	.175	.313	.487	.206

SUMMARY V

Proportion of Forms by Titles

	FORMS	PERCENTAGE	RANK
Numbers.....	51	.213	2
Hours.....	28	.117	5
Days.....	50	.208	3
Months.....	78	.325	1
Alphabet.....	33	.137	4
Total	240	1.000	

Compare this with a similar table from Miss Calkins:¹

	FORMS	PERCENTAGE	RANK
Numbers.....	67	.279	2
Hours.....	5	.021	5
Days.....	50	.208	3
Months.....	73	.304	1
Alphabet.....	45	.188	4
Total	240	1.000	

Compare also with a less complete result by Phillips:

	FORMS	PERCENTAGE	RANK
Numbers.....	147	.351	2
Week.....	34	.082	3
Month.....	214	.512	1
Alphabet.....	23	.055	4
Total.....	418	1.000	

In all three tables the order is the same—months, numbers, days, and alphabet, with the hours (omitted by Phillips) coming in fifth in Miss Calkins' and the writer's results.

In spite of the different gathering ground of Miss Calkins' questionnaire and the present one, the proportion of day-of-the-week forms is exactly the same.

¹ Op. cit., p. 440, summary II.

The total number of forms considered (240) in the two tables is the same, but this is a pure coincidence.

A more rigid classification of the replies received is seen in the next table.

In studying the returns, notes or copies of the more extraordinary visualizations were set down. A few of these may be included under the more ordinary titles heretofore given.

SUMMARY VI

Proportion of the More Striking Visualizations

	NUMBERS		HOURS		DAYS		MONTHS		ALPHABET	
		%		%		%		%		%
Visualizations.....	23	.144	31	.194	24	.150	33	.206	22	.138
Remainder.....	137	.856	129	.806	136	.850	127	.794	138	.862
Total.....	160	1.000	160	1.000	160	1.000	160	1.000	160	1.000

This table gives the relative order of months, hours, days, numbers, and alphabet. The first holds its place, while the hours come up and the numbers go down and the days remain the middle term.

When it comes to the problem of determining what proportion of individuals visualize, results are difficult to obtain.

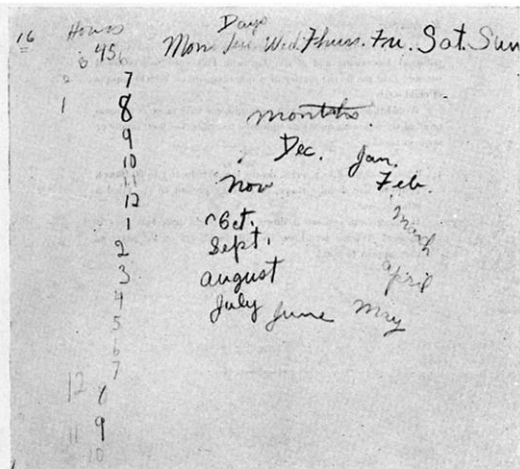
It is hard to frame a questionnaire in such a way as to elicit all one knows without suggesting answers; it is hard to overcome an absurd but natural shyness in those who visualize and to persuade those who do not that there is anything in it.

With all the good will in the world, neither child nor adult can describe at the first all he knows, nor does he know all there is to say about himself until he has examined himself very thoroughly.

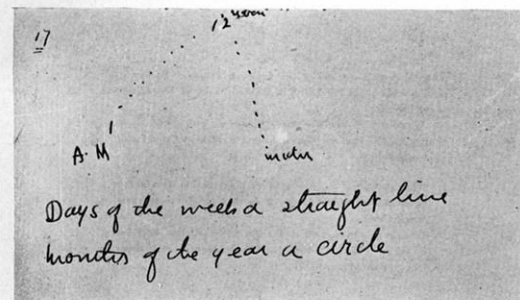
In many cases of tridimensional forms, children do not know how to express themselves, and an interesting form will be reported as "just a straight line." An approximation to the proportion of those having forms may be made, however.

Of all the answers, 160 in the aggregate, 74 (or 46%) contained a form of some sort and 23 (or 14%) had number forms.

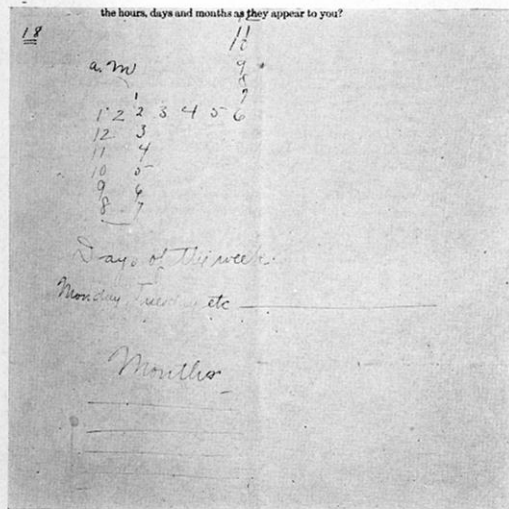
As it is hoped that the Andover answers are as yet far from all in, a fairer proportion may be found by omitting the 39 Andover answers. Of the 128 that are left, 54 (or 42%) have forms.



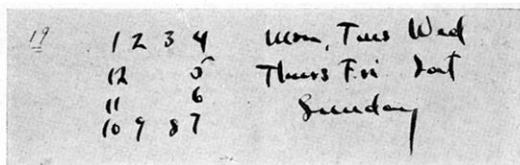
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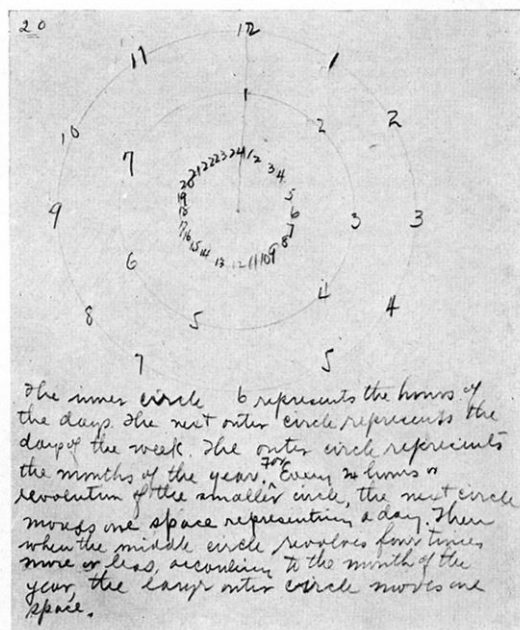
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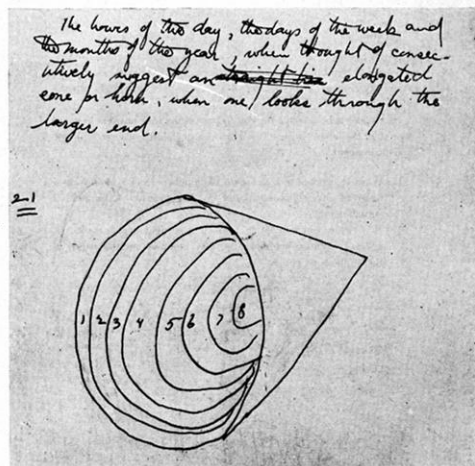
18



19



20



21

Of course, to obtain the 128 answers and the 54 forms, about 700 circulars were sent out. If it is assumed that all who did not answer were not endowed with any forms at all, the proportion is 54 in 700, or about 8%. But this is not the case. Indifference, carelessness, and lack of opportunity let slip many instances where forms could have been recorded.

The 42% is entirely too high, as would be any ratio derived from positive answers; the 8% is too low. The mean of these is 25%, and this may represent a general average of the number of those who possess some definite visualization in space of at least two dimensions under the five titles indicated.

Results obtained by other investigators vary considerably; they are not, however, based always on the same number of types of visualizations. Galton's ratio, in his paper on number forms, is much less than 25%. Flournoy gives about 11% for "visual schemes"; Phillips gives 7% for number forms. Miss Calkins gives several ratios, of which the mean is about 28% for forms; and Phillips again thinks that "all have some idea of the extension of number."

To sum up, 25% is probably too high, but not very much so for the proportion of those who possess forms of some type. There are many others that could be inquired into, and some of them have already been studied—years, centuries, colors of the spectrum, parts of speech, etc.

More interesting is the fact that many who have no forms under one title may possess several under others. The following table will bring this out.

SUMMARY VII

Subjects with all possible (five) forms.....	2	or	10 forms
Subjects with 4 forms.....	4	or	16 forms
Subjects with 3 forms.....	10	or	30 forms
Subjects with 2 forms.....	19	or	38 forms
Subjects with 1 form only.....	39	or	39 forms
Subjects with 0 form.....	86		
Total.....	160	with	133 forms

From the subjects with but a single form to those with all, there is almost an exact geometrical progression with a ratio of one-half. This is rather striking, and not at all what one would expect. The rate of diminution should, it would seem, be more rapid.

Besides the general observation we have seen, a few particular instances may be noted.

In the answers on numbers, emphatic numerals which may or may not have some logical connection with the subject or a related object are not infrequent; the same is true of the alphabet, and in lesser degree of the other titles where the chronological position of the observer is of considerable moment.

Tridimensional concepts, perspective, "away from the individual," "straight out and then down," or "to a vanishing point," are not common, but are found under all five headings. They are probably much more numerous, as observed above, than is set down in the imperfect expressions of the subjects.

One correspondent reports numbers as representing historical scenes. This is unusual, whereas personality and, still more, color ideas are far from uncommon. It seems impossible, from what the writer reads and feels, that there should be many without some color scheme for the objects of the sister senses.

In the series under hours, of the answers in the form of circles N., E., S., W., 56 (or 95%) begin at the north, or top, as do the hours on the clock.

The ordinary visualization of the days of the week in a straight line to the east and south presents some variety in the opening day.

SUMMARY VIII

Week beginning on Sunday.....	17, or	25%
Week beginning on Monday.....	44, or	64%
Week beginning on Saturday.....	1, or	1%
Week undetermined.....	7, or	10%
Total.....	69, or	100%

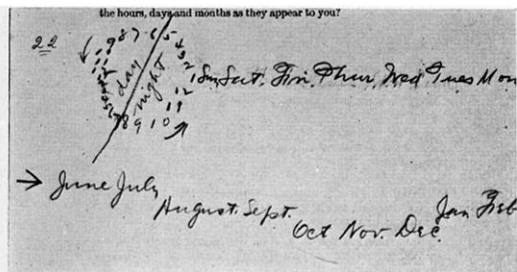
Of the more normal series of the months (i. e., straight lines E. and S., and circles N., E., S., W., and N., W., S., E.) the figures run:

SUMMARY IX

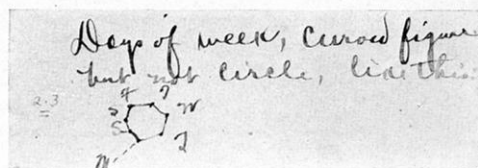
Months beginning with January.....	67, or	82%
Months beginning with September.....	1, or	1%
Months beginning undetermined.....	14, or	17%
Total.....	82, or	100% ¹

It may be of interest to state that the only clear visualization of the writer is that of the months which begin with January at the

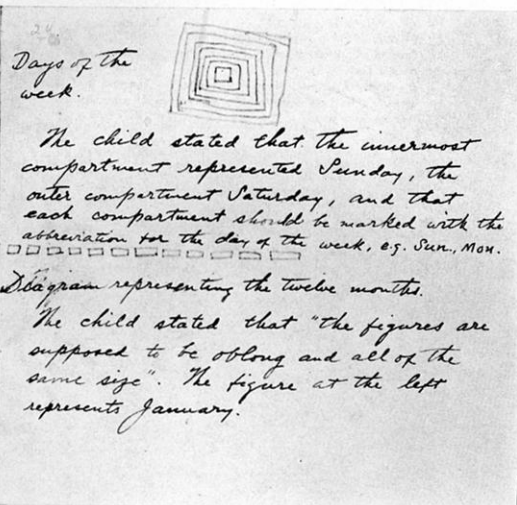
¹ In Summaries VIII and IX the indefinite is not included.



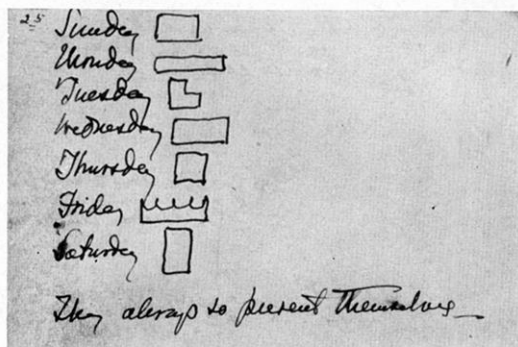
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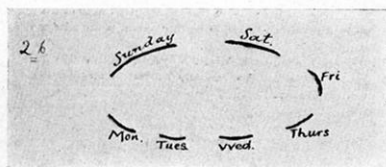
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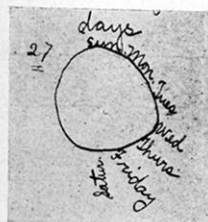
24



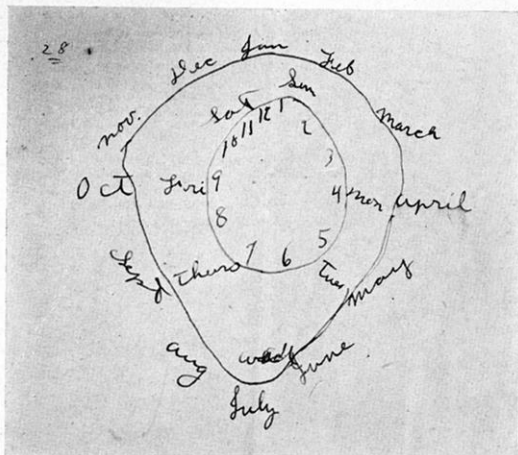
25



26



27



28

bottom of a circle running S., E., N., W., or contrary to the hands of a watch.

The practical question as to whether use can be made in pedagogy, or in calculation, memorizing, or recitation, of the forms, seems in a fair way of being settled in the affirmative.

Miss Calkins reports a slight preponderance of "not useful" answers, but, as has been pointed out, that is not equivalent to "detrimental." Mlle Diamandi uses her scheme as a kind of frame for her weird and abnormal calculations (see Manouvrier's article), and visualization is of immediate use to one clergyman who was good enough to answer the present questionnaire: "I think, calculate, think of history, dates therein, etc., practically wholly in mentally visualized words and figures—remembering passages in books, the Bible, sermons from typewritten manuscripts, etc., by mentally seeing the words and then simply reading them off."

The faculty of visualization seems quite normal. To be sure, one of the two subjects who sent in five figures is marked by her teacher as "peculiar," but beyond this the present series permits few generalizations. Whether a dull stupid subject would be likely to abound with results may be doubted. The faculty is one of intelligent healthy nature.

APPENDIX

Figures 1-5 and 6-10 are given not because of any inherent interest but to give the complete picture of the forms under all five titles as seen by the subjects.

Figure 11 (given by the writer's third daughter) is remarkable for the peculiar angles at the breaks, for the breaks themselves which do not follow any decimal or duodecimal rule, and for the separate, floating line of figures 41 to 49.

Figure 12 has decimal breaks, but is a good example of the rare northwesterly direction.

Figure 13 acts like a boomerang cavorting in scallops; very rare.

Figure 14 is altogether extraordinary; it looks as if suggested by an astronomical plan of stellar orbits, with the ego as the sun.

Figure 15, with the rare northwesterly resultant, has no rule for the breaks whatever; the writer's young friend who showed him this scheme is responsible thereby for the whole investigation.

Coming to the hours, figure 16 presents a vertical ellipse which, however, contrary to custom, is not closed.

Figure 17 is not illogical; the slow ascent to noon and the rapid descent to midnight may represent a working day.

Figure 18 is quite illogical and presents the phenomenon of crossing lines.

Figures 19 gives the hours in a square, certainly not suggested by the ordinary clock.

Figure 20, with the hours, days, and months revolving in concentric circles, is self-conscious but convincing.

Figure 21, "a cone looked at from the larger end," is unique.

Figure 22 seems also of astronomical provenance; the division into day and night equally is not uncommon.

Days: Figure 23, heptagon arranged contrariwise to the hands of a watch is certainly ingenious. Likewise figure 24, seven squares arranged like a Chinese puzzle.

Figure 25 smacks a little of the kindergarten, but is probably quite authentic and original; it is unique in this series.

Figure 26, one of the few closed curved day-forms, also runs contrary to the hands of a watch.

Figure 27, with the days principally on one side of a circle, is described as "constantly turning."

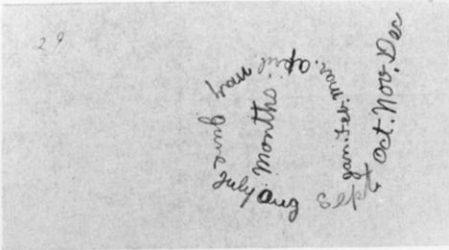
Figure 28, with the days mostly on the left of a circle, has a large lacuna between Sunday and Monday; this may be due, as is the great number of weeks beginning on Monday, to the school work which begins on that day and between which and the joy of Sunday there is a great gulf.

Months: Figure 29, a small spiral, projects December into space toward the northeast.

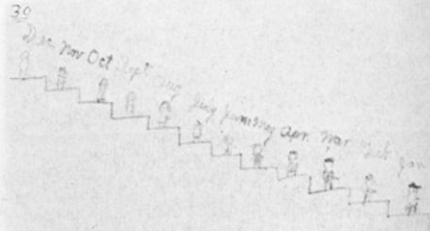
Figure 30. The months appear as steps mounting strangely to the northwest, with a figure on the top, at December. "Months represented as people coming down stairs." Something like this is given by Flournoy (fig. 73, p. 173), but the steps ascend normally to the northeast.

In figure 31 the point of view, probably the ego, is shown asymmetrically within an extraordinary polygon. Interesting.

Figure 32 is similar, in a way, to 30. The months which oppose the hands of a watch are of varying lengths.

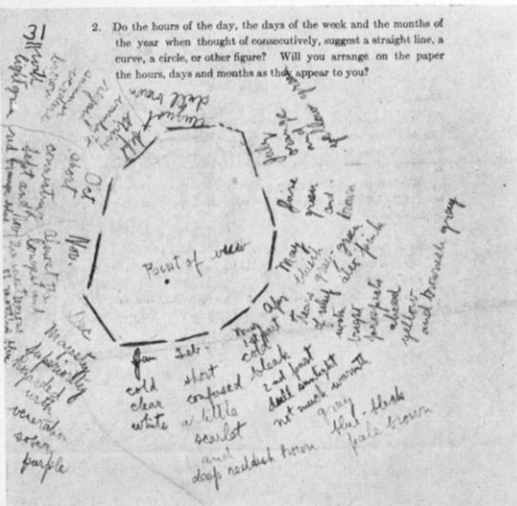


29

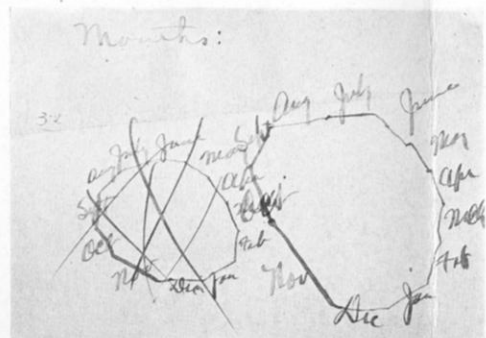


This idea came from having seen the months represented at people counting down stairs when a very small child

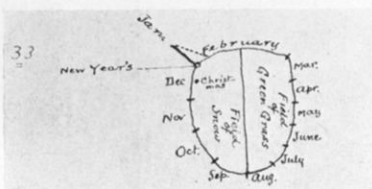
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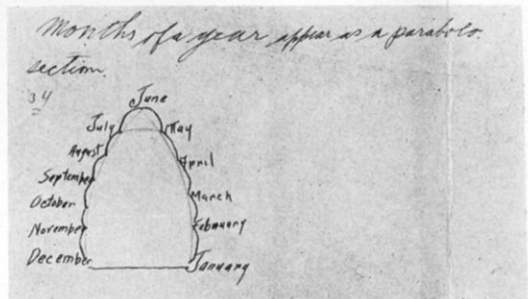
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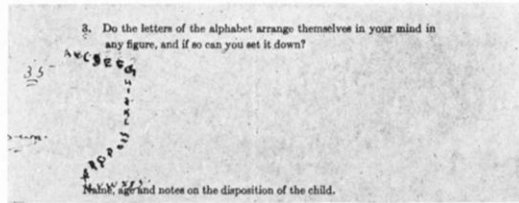
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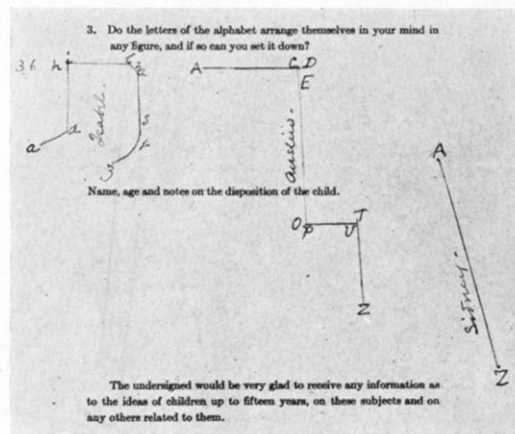
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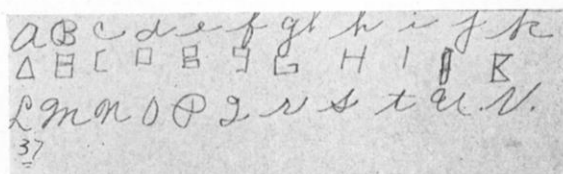
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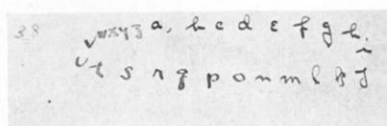
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37



38

Figure 33, shield-shaped, with January stuck on at the northwest and its color values, is quite different from the others.

Figure 34, partly a parabola, resembles figure 13 in its scalloped edges.

Alphabet forms are not so striking as the others. Figure 35 shows the letters in lines that turn at unusual obtuse and acute angles.

Figure 36 seems to have no reason for its existence; it may be described as a freak.

Figure 37 looks like a child's semi-joke like play-words which have an assonance with the real.

Figure 38 is a rare form, more or less elliptical with the spacing of the individual letters very irregular.

In general, these examples will show the character and the variety of the true "forms"; many are and will be published, but there will be few duplicates.

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